



122304

14202 U.S. PTO

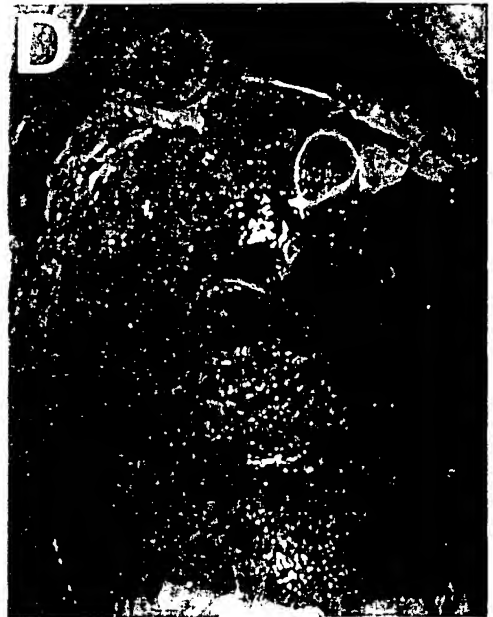


Figure 1

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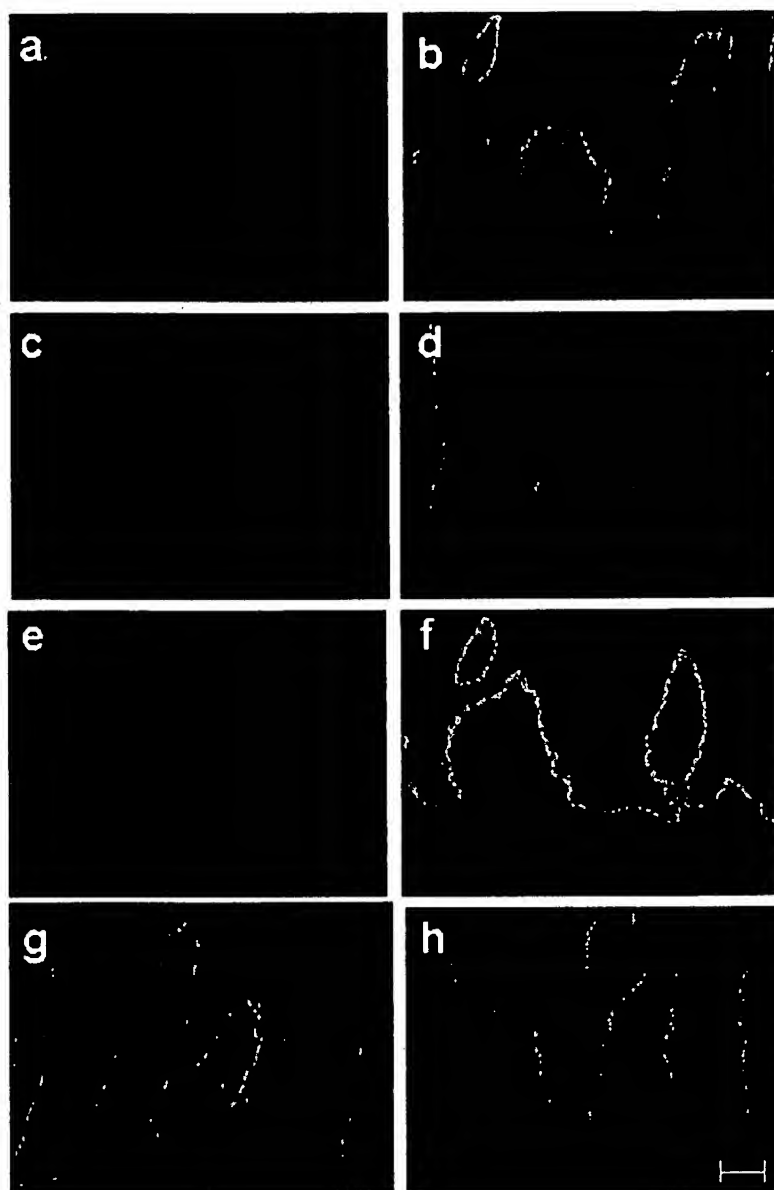


Figure 2

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5'TGGGTCCTCTTATTACAGG -177
TGAGTCACACCCTGAAACACAGGCTCTCTTCTGTGAGGACTGAGTCAGGTAGAAGAGTCCATAAAACCACCTGATCAAGGAAAAG -91
GAAGGCACAGCGGAGCGCAGAGTGAGAACTCCCAGCGGCGAGGCGCGGGCAGCGACCCCTGCAGCGGCGGACCGCGCGCCGCTGGCC -1
ATGCCTGCGCTCTGGGTGAGCTGCTACCTCTGCTTCTCGTCTCTCTGCCCCAGCCCCGGGCCACCTCCGGGAGGGAAGTCTGTGATTGC 90
M P A L W L S C Y L C F S L L L P A A R A T S G R E V C D C 30
AACGGGAAGTCCAGGCAATGCATCTTTGACCAGGAACCTTCAAAACAGACAGGAAATGGATTCCGCTGCCTCAACTGCAATGACAACACT 180
N G K S R Q C I F D Q E L H K Q T G N G F R C L N C N D N T 60
GATGGCATCCACTGCGAGAGGTGCAAGGCAGGATTTTACCACAGAGAGAGAAAGGACCGCTGTTTACCCTGCAATTGTAACCTCTAAAGGT 270
D G I H C E R C K A G F Y R Q R E R D R C L P C N C N S K G 90
TCTCTTAGCGCTCGATGTGACAACTCTGGACGGTGACGCTGTAAGCCAGGTGTGACAGGAGACAGGTGTGACCGATGTCTGCCCGGCTTC 360
S L S A R C D N S G R C S C K P G V T G D R C D R C L P G F 120
CACACACTCACTGATGCTGGGTGCGCCCAAGACCAAAGGCTGCTAGACTCCAAGTGTGACTGTGACCCAGCTGGCATCTCAGGGCCCTGT 450
H T L T D A G C A Q D Q R L L D S K C D C D P A G I S G P C 150
GACTCAGGCCGCTGTGTCTGCAAGCCGGCTGTCACTGGAGAGCGCTGTGATAGGTGTGACCCAGGTTACTATCACCTGGATGGGGGAAAC 540
D S G R C V C K P A V T G E R C D R C R P G Y Y H L D G G N 180
CCTCAGGGCTGTACCCAGTGTTTTTGCTATGGGCATTCCGCCAGCTGCCACAGCTCTGGGGAATACAGTGTCCATAAAATCATCTCTGCC 630
P Q G C T Q C F C Y G H S A S C H S S G D Y S V H K I I S A 210
TTCCATCAAGATGTTGATGGCTGGAAGGCTGTCCAAAGAAACGGGTCTCTGCAAGCTCCAGTGGTACAGCGCCATCGGGATATATTT 720
F H Q D V D G W K A V Q R N G S P A K L Q W S Q R H R D I F 240
AGCTCAGCACGACGATCAGACCCTGTCTATTTGTAGCTCCTGCCAAATTTCTTGGGAATCAACAGGTGAGCTACGGGCAAAGCCTATCT 810
S S A R R S D P V Y F V A P A K F L G N Q Q V S Y G Q S L S 270
TTGACTACCGTGTGGATAGGGGAGGCAGACCCCATCTGCCCATGACGTGATCCTGGAAGGTGCTGGTCTACGGATCACAGCTCCCTTG 900
F D Y R V D R G G R H P S A H D V I L E G A G L R I T A P L 300
ATGCCACTTAGCAAGACACTGCCTTGTGGGATCACCAAGACTTACACATTAGATTAAATGAACATCCAAGCAGTAATTGGAGCCCCCAG 990
M P L S K T L P C G I T K T Y T F R L N E H P S S N W S P Q 330
CTAAGTTACTTTGAGTATCGGAGGTTACTGCGGAACCTCACAGCCCTGCGGATCCGAGCTACCTACGGAGAATACAGTACTGGGTACATT 1080
L S Y F E Y R R L L R N L T A L R I R A T Y G E Y S T G Y I 360
GACAACGTGACCTTGATTTTCAGCCCCCCCCGTTTCTGGAGCCCCAGCGCCCTGGGTTGAACAATGTGTATGCCCTGTTGGCTACAAGGGG 1170
D N V T L I S A R P V S G A P A P W V E Q C V C P V G Y K G 390
CAGTTCTGCCAGGATTGTGCTTCCGGCTACAAAAGAGATTGAGCCAGACTGGGACCTTTTGGCACCTGTATTCCATGTAAGTCCCAAGGG 1260
Q F C Q D C A S G Y K R D S A R L G P F G T C I P C N C Q G 420
GGAGGGGCTGCGATCCAGACACAGGAGACTGTTACTCAGGGGATGAGAACCCTGACATCCCTGAGTGTGCTGACTGCCCATTTGGTTTC 1350
G G A C D P D T G D C Y S G D E N P D I P E C A D C P I G F 450
TACAACGATCCACAAGACCCCCGAGCTGCAAGCCGTGCCCTGTGCAATGGGTTGAGCTGCTCCGTGATGCCTGAGACAGAGGAGGTG 1440
Y N D P Q D P R S C K P C P C R N G F S C S V M P E T E E V 480
GTGTGCAATAACTGCCCCAGGGTGTCACTGGTGGCCGCTGTGAGCTCTGTGCTGATGGCTATTTTGGGGACCCCTTCGGGGAACGTGGC 1530
V C N N C P Q G V T G A R C E L C A D G Y F G D P F G E R G 510
CCAGTGAGGCCTTGTGAGCCCTGTGAGTGCAACAACAACGTGGACCCTAGTGCCTCCGGGAACCTGTGACCGCCTGACAGGCAGGTGTCTG 1620
P V R P C Q P C Q C N N N V D P S A S G N C D R L T G R C L 540
AAGTGCATCCACAACACAGCTGGGGTCCACTGTGACCAAGTGTGCAAGCAGGCTACTATGGGGACCCGTTGGCTCCCAATCCAGCAGACAAG 1710
K C I H N T A G V H C D Q C K A G Y Y G D P L A P N P A D K 570
TGTCGAGCTTGCAACTGCAACCCAGTGGGCTCGGAGCCTGTGGAGTGTGCAAGTGTGAGCAGCTGTGTTTGAAGCCAGGCTTTGGTGGC 1800
C R A C N C N P V G S E P V E C R S D G S C V C K P G F G G 600

FIG. 3A

CTCAGCTGTGAGCATGCGGCACTGACCAGCTGTCCAGCTTGTCTATAATCAAGTGAAGGTTTCAGATGGATCAGTTTATGCAGCAGCTCCAG 1890
 L S C E H A A L T S C P A C Y N Q V K V Q M D Q F M Q Q L Q 630
 Dom. I/II
 ATCTCGAGGCCCTGATTTTCGAAGGCTCAGGGTGGAGCAGTACCCAACGCAGAGCTGGAAGGCAGGATGCAGCAGGCTGAGCAGGCCCTT 1980
 I L E A L I S K A Q G G A V P N A E L E G R M Q Q A E Q A L 660
 CGGGACATTCTGAGAGAAGCCCAGATTTACACAAGATGCTGTGTAGATCCTTCAATCTCCGGGTGGCCAAGGCAAGGACTCAAGAGAATAGC 2070
 R D I L R E A Q I S Q D A V R S F N L R V A K A R T Q E N S 690
 TACCGGGACCGCTGGATGACCTCAAGATGACTGTGGAAAGAGTTTCGGGCCCTGGGCAGTCAGTATCAGAACCAAGTTTCAGGATACTCGC 2160
 Y R D R L D D L K M T V E R V R A L G S Q Y Q N Q V Q D T R 730
 AGGCTCATCACTCAGATGCGCCTGAGCCTGGAGGAAAGTGAGGCTTCCCTGCAAAACACCAACATTCCTCCTTCAGAGCACTACGTGGGG 2250
 R L I T Q M R L S L E E S E A S L Q N T N I P P S E H Y V G 750
 CCAAATGGCTTTAAAGTCTGGCTCAGGAGGCCACGAGATTGGCAGACAGCCATGTTTCAGTCAGCCAGTAACATGGAGCAACTGGCAAAG 2340
 P N G F K S L A Q E A T R L A D S H V Q S A S N M E Q L A K 780
 GAAACCCAGGAGTATTCCAAAGAGCTGATGTCACTGGTGCAGGAGGCTCTGCAGGAAGGAGGCGGAAGCGGCAGCCTGGACGGAGCCGTG 2430
 E T Q E Y S K E L M S L V R E A L Q E G G G S G S L D G A V 810
 GTGCAAGGCTTGTGGGAAATTCAGAAAATAAATCTCTGGCCAGGAGTTGTGAGGAGGCGCACGCAACCGACATGGAAGCAGAT 2520
 V Q R L V G K L Q K T K S L A Q E L S R E A T Q T D M E A D 840
 AGGTCTTATCAGCATAGTCTCCACCTTCTCAATCCGTGTCTCAGATTTCAGGAGTCAATGATCAGTCCTTGCAGGTAGAAGCGAAGAGG 2610
 R S Y Q H S L H L L N S V S Q I Q G V N D Q S L Q V E A K R 870
 CTCAGACAAAAAGCTGATTCTCTCTCAAACCGTGTGACTAAGCATATGGATGAGTTCAAGCACGTGCAAAAGCAATCTGGGAACTGGGAA 2700
 L R Q K A D S L S N R V T K H M D E F K H V Q S N L G N W E 900
 GAAGAAACCCGCGCAGCTTTACAGAATGGAAGAATGGGAGACAGACATCAGATCAGCTGCTTTCCCGTGCCAACCTTGCTAAAAGCAGA 2790
 E E T R Q L L Q N G K N G R Q T S D Q L L S R A N L A K S R 930
 GCCCAAGAGCACTAAGTATGGGCAATGCCACTTTTTATGAAGTTGAGAACATCTTAAAGAATCTCAGAGAGTTTGACCTGCAGGTTGGA 2880
 A Q E A L S M G N A T F Y E V E N I L K N L R E F D L Q V G 960
 GATAAAGAGCAGAAGCTGAAGAGGCCATGAAGAGACTCTCTACATCAGCCAGAAGGTTGCAGGTGCCAGTGACAAGACGAAGCAAGCA 2970
 D K R A E A E E A M K R L S Y I S Q K V A G A S D K T K Q A 990
 GAAGCAGCCCTGGGCGAGTGTCTGCTGCCGACGCCAGAGGGCAAAGAATGCAGCCAGGAGGCCCTGGAGATCTCTGGCAAGATAGAACAG 3060
 E A A L G S A A A D A Q R A K N A A R E A L E I S G K I E Q 1020
 GAGATAGGAGGTCTGAACCTTGAAGGCCAATGTGACAGCAGATGGAGCCTTGGCCATGGAGAAGGGACTGGCCACTCTGAAAAGTGAGATG 3150
 E I G G L N L E A N V T A D G A L A M E K G L A T L K S E M 1050
 AGAGAAGTGAAGGAGAGCTGTCAAGGAAGGAGCAGGAGTTTGACATGGATATGGACGAGTGCAGATGGTAATTGCAGAGGCCCAAAGA 3240
 R E V E G E L S R K E Q E F D M D M D A V Q M V I A E A Q R 1080
 GTTGAAAACAGAGCCAAGAATGCTGGAGTTACGATCCAAGACACACTCAACACATTGGATGGCATCCTACACCTAATAGACCAGCCTGGC 3330
 V E N R A K N A G V T I Q D T L N T L D G I L H L I D Q P G 1110
 AGTGTGGATGAAGAGAGGCTGATCTTACTGGAGCAGAAGCTTTTCCGAGCCAAGACTCAGATCAACAGCCAGCTACGGCCCTTGATGTCA 3420
 S V D E E R L I L L E Q K L F R A K T Q I N S Q L R P L M S 1140
 GAGCTGGAAGAGAGGGCACATCGGCAGAAGGGCCACCTCCGTTTCTGGAGACTAGCATAGATGGGATTCTGGCTGATGTGAAGAACCTG 3510
 E L E E R A H R Q K G H L R F L E T S I D G I L A D V K N L 1170
 GAGAATCATCAGGACAACTGCCCCGGGCTGTACAATACCCAGGCTCTTGAGCAACAGTgaagctgccttagagattttctcaaccaag 3600
 E N I R D N L P P G C Y N T Q A L E Q Q * 1190
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 tggggtgggatgggaatatttgaatatgttgatgcgtgtgctcagggcccgatgaacctgatcccatccctgagacctcgccagataa 3780
 atgtctttattg 3789-3'

FIG. 3B

horse	1	MPALWLSYLCFSLLLPAARATSGREVCDNKGSRQCFIDQELHKQTGNCFRCLNCNDNTDGIHCERCKAGFYRQRERDRCLPCNCSKSGLSARCDNSG
man	1	MPALWLGCCCLFSLLLPAARATSRREVCDNKGSRQCFIDRELHRQTGNCFRCLNCNDNTDGIHCEKCKNGFYRIHREDRCLPCNCSKSGLSARCDNSG
mouse	1	MPALWLSCCCLGVALLLPASQATSRREVCDNKGSRQCFVDFQELHRQAGSGFRCLNCNDNTAGVHCERSREGFYHQSKSRCLPCNCHSKSGLSAGCDNSG
horse	101	RCCKPGVTGDRCDRCLPGFHTLTDAGCAQDQRLLDSKDCDPAISGPCDSGRVCVCKPAVTGERCDRCRPGYYHLDDGNPQGGCTQCFCYGHASACISSG
man	101	RCCKPGVTGARCDRCLPGFHTLTDAGCTDQDRLLDSKDCDPAISGAGPCDAGRCVCKPAVTGERCDRCRSGYYNLDGNGPEGCTQCFCYGHASACRSSA
mouse	101	QCRCKPGVTGQRCDQCQCPGFHMLTDAGCTRDQQLDSKDCDPAISGPCDSGRVCVCKPAVTGERCDRCRPRDYHLDRANPEGCTQCFCYGHASASCHASA
horse	201	DYSVHKIISAFHQDVGWKAQVRNGSPAKLQWSQRHRDISSARRSDPVYFVAPAKFLGNQVSYGQSLSFDFYRDRGGRHPSAHDVILEGAGLRITAPL
man	201	EYSVHKITSTFHQDVGWKAQVRNGSPAKLQWSQRHQDVFSSAQRLDPVYFVAPAKFLGNQVSYGQSLSFDFYRDRGGRHPSAHDVILEGAGLRITAPL
mouse	201	DFSVHKITSTFSQDVGWKAQVRNGGAPAKLHWSQRHRDVSSARRSDPVYFVAPAKFLGNQVSYGQSLSFDFYRDRGGRQPSAYDVILEGAGLQIRAPL
horse	301	MPLSKTLPFCGITKTYTFRLNEHPSSNWSPQLSYFEYRRLRLNLALTALRIRATYGEYSTGYIDNVTLISARPSVGAPAPWVEQCVPGYKGQFCQDCASG
man	301	MPLGKTLPCGLTKTYTFRLNEHPSSNWSPQLSYFEYRRLRLNLALTALRIRATYGEYSTGYIDNVTLISARPSVGAPAPWVEQCVPGYKGQFCQDCASG
mouse	301	MAPGKTLPCGITKTYTFRLNEHPSSHWSPQLSYFEYRRLRLNLALTALLMIRATYGEYSTGYIDNVTLISARPVLGAPAPWVERCVCLLGYKGQFCQECASG
horse	400	YKRDSARLPGFCTIPCNCCQGGGACDPDTGDCYSGDENPDIECADCPIGFYNDPQDRSCKPCPCRNFGSCSVMPEETEEVVCNNCPQGVGTGARCELCA
man	400	YKRDSARLPGFCTIPCNCCQGGGACDPDTGDCYSGDENPDIECADCPIGFYNDPQDRSCKPCPCRNFGSCSVMPEETEEVVCNNCPQGVGTGARCELCA
mouse	401	YKRDSARLGAFCVPCNCQGGGACDPDTGDCYSGDENPDIECADCPIGFYNDPQDRSCKPCPCRNFGSCSVMPEETEEVVCNNCPQGVGTGARCELCA
horse	500	GYFGDPFGERPVRPCQPCQNNNVDPSSASGNCDRLTGRCCLKIHTAGVHCDQCKAGYVGDPLAPNPADKCRACNCPNPVSEPEVCECRSDGSCVCKPGFG
man	499	GYFGDPFGEHGPVRPCQPCQNNNVDPSSASGNCDRLTGRCCLKIHTAGIYCDQCKAGYFGDPLAPNPADKCRACNCPNPVSEPEVCECRSDGTCVCKPGFG
mouse	500	GFFGDPFGEHGPVRPCQPCQNNNVDPSSASGNCQDLTGRCCLKIYNTAGYCDQCKAGYFGDPLAPNPADKCRACNCPNPVSEPEVCECRSDGSCVCKPGFG
horse	600	GLSCEHAALTSCPACYNQVQMDQFMQQLQILEALISKAQGG---AVPNAELEGRMQQAQALRDILREAQISQDQAVRSFNLRVAKARTQENSYKDRDL
man	599	GPNCHEGAFSCPACYNQVQMDQFMQQLQRMALISKAQGGDG-VVPDTELEGRMQQAQALQDILRDAQISEGASRSLQLQAKVRSQENSYSQSRDL
mouse	600	AFNCDDHAALTSCPACYNQVQIQMDQFTQQLQSLQLEALVSKAQGGGGTVPVQLEGRIEQAQALQDILGEAQISEGAMRAVAVRLAKARSQENDYKTRLD
horse	697	DLKMTVERVRLGSGYQNVQDTRRLITQMRLSLEESASLQNTNIPPSEHYVGPNGFKSLAQEAATRLADSHVQSASNMEQLAKETQEYSKELMSLVREA
man	697	DLKMTVERVRLGSGYQNVQDTRRLITQMRLSLEESASLQNTNIPASDHVYVGPNGFKSLAQEAATRLAESHVESASNMEQLTRETEDYSKQALSIVRKA
mouse	700	DLKMTAERIRALGSHQNVQDTRSLISQMRSLAGSEALLENTHISSEHYVGPNDFKSLAQEAATRLKADSHAESANAMKQLARETEDYSKQALSIVRKA
horse	797	LOE---GGGSGSLDGAVVQRLVGKQKLSLAQELSREATQTDMEADRSYQHSILHLNLSVSQIQGVNDQSLQVEAKR-LRQKADSLSNRVTKHMDEFKHVQ
man	797	LHEGVGSGSGSPDGAVVQGLVEKLEKTKSLAQQLTREATQAEIADRSYQHSILHLNLSVSRLLQGVSDQSFQVEEAKRIKQKADSLSTLVTTRHMEDEFKRTQ
mouse	800	LSG---GGGSGSWDSSVVQGLMGKLEKTKSLSQLSLEGTQADIEADRSYQHSILHLNLSASQLQGVSDLSFQVEAKR-IRQKADSLSNLVTQTDFTVR
horse	894	SNLGNWEEETROLLONGKNGRQTSQDQLSRANLAKSRAQEAALSMGNATFYEVENILKNLREFDLQVGDKRAEAEEAMKRLSYISOKVAGASDKTKQAEEA
man	897	KNLGNWKEEAQQLLQNGKSGREKSDQLLSRANLAKSRAQEAALSMGNATFYEVENILKNLREFDLQVNDNRKAEAEAMKRLSYISOKVSDASDKTQQAERA
mouse	897	NNLGNWKEETRQLLQTKDRRQTSQDQLLSRANLAKNRAQEAALSMGNATFYEVENILKNLREFDLQVEDRKAEEAMKRLSSISQKVADASDKTQQAETA
horse	994	LGSAAADAQRAKNAAREALEISGKIEIGLNEANVTADGALAMEKGLATLKSEMREVEGELSRKEQEFMDMDAVQMVIAEAQRVENRAKNAGVTIQ
man	997	LGSAAADAQRAKNAGAGEALEISSEIEIGLNEANVTADGALAMEKGLASLKSEMREVEGELSRKELEFDTNMDAVQMVITEAQKVDTRAKNAGVTIQ
mouse	997	LGSATADTQRAKNAAREALEISSEIEIGLNEANVTADGALAMEKGTATLKSEMREMI-ELARKELEFDTKDTVQLVITEAQQADARATSAAGVTIQ
horse	1094	DTLNTLDGILHLIDQPGSVDEERLILLEQKLFRAKTQINSQRLPMLSELEERAHQKGLHRLFLETSIDGILADVKNLENIRDNLPFGCYNTQALEEQ
man	1097	DTLNTLDGILHLMDQPLSVDEEGLVILEQKLSRAKTQINSQRLPMLSELEERARQQRGHLHLETSIDGILADVKNLENIRDNLPFGCYNTQALEEQ
mouse	1096	DTLNTLDGILHLIDQPGSVDEEGMMLLEQGLFQAKTQINSQRLPMLSDLEERVRRQRNHLHLETSIDGILADVKNLENIRDNLPFGCYNTQALEEQ

FIG. 4

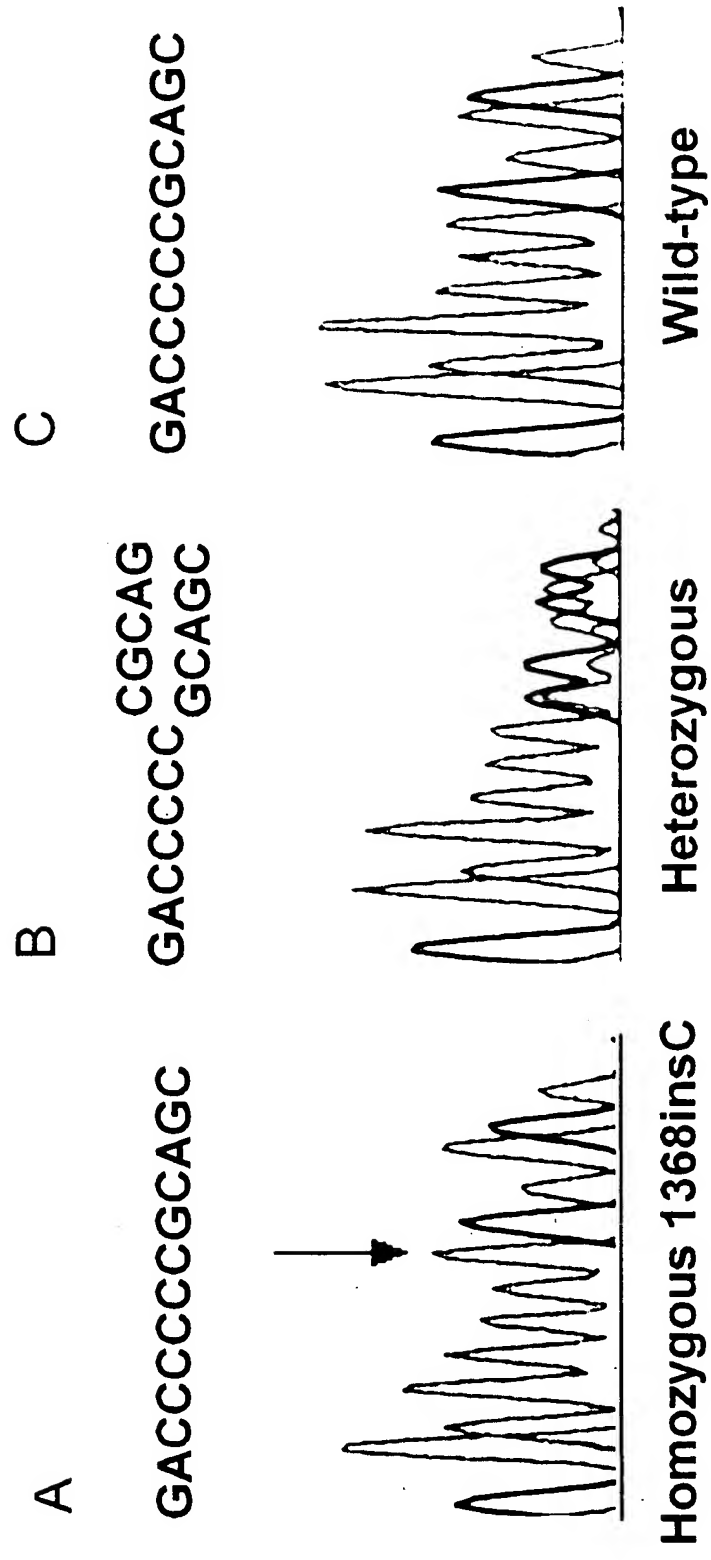


Figure 5

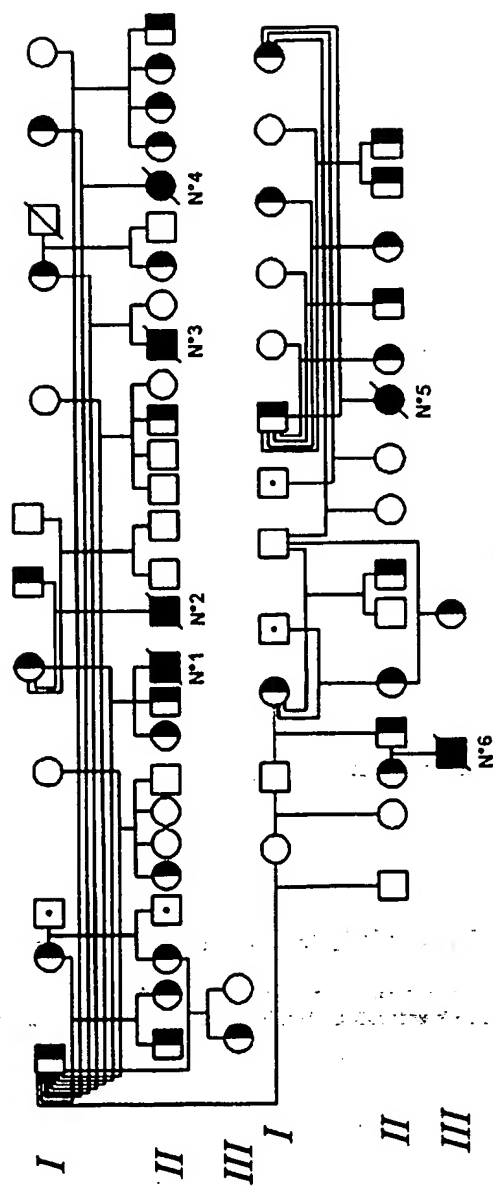


Figure 6